

AACATGGTGGTCCGGGCCTGTGGCTGCCACTAGCTCCT (nucleotides 16-314 of SEQ ID NO: 42), or

(b) encoding an amino acid sequence:

LYVSFRDLGWQDWIIAPEGYAAYYCEGECAFPLNSYMNATNHAIVQTLV
HFINPETVPKCCAPQLNAISVLYFDDSSNVILKKYRNMVVRACGCH
(SEQ ID NO: 39), or a conservative amino acid variant thereof,
wherein said nucleic acid sequence encodes a protein competent to induce bone
and cartilage in a mammal.

82. (New) The isolated nucleic acid molecule of claim 81 comprising the nucleic acid sequence

TGTAAGAACGACGAGCTGTATGTCAGCTTCCGAGACCTGGCTGGCAGGACT
GGATCATCGCGCCTGAAGGCTACGCGCGCTACTACTGTGAGGGGGAGTGTGC
CTTCCCTCTGAACTCCTACATGAACGCCACCAACCACGCCATCGTCAGACG
CTGGTCCACTTCATCAACCCGGAAACGGTGCCAAGCCCTGCTGTGCGCCCA
CGCAGCTCAATGCCATCTCCGTCTACTTCGATGACAGCTCCAACGTCATC
CTGAAGAAATACAGAAACATGGTGGTCCGGGCCTGTGGCTGCCACTAGCTCC
T (SEQ ID NO: 42),

or encoding an amino acid sequence:

CKKHELYVSFRDLGWQDWIIAPEGYAAYYCEGECAFPLNSYMNATNHAIVQTL
VHFINPETVPKCCAPQLNAISVLYFDDSSNVILKKYRNMVVRACGCH (amino acids 6-107 of SEQ ID NO: 9).

83. (New) The isolated nucleic acid molecule of claim 81 or 82 wherein said protein competent to induce bone and cartilage further comprises

(a) a pair of unglycosylated polypeptide chains, each of said unglycosylated polypeptide chains having a molecular weight of about 14 kDa to 16 kDa; or
(b) an unglycosylated dimeric protein having a molecular weight of about 27 kDa.

84. (New) An isolated nucleic acid molecule comprising:

- (a) a first nucleic acid sequence consisting essentially of nucleotides 1-1880 of Fig. 1A (SEQ ID NO: 40), and
- (b) a second nucleic acid sequence consisting essentially of nucleotides 1920-4842 of Fig. 1A (SEQ ID NO: 40).

85. (New) An isolated nucleic acid molecule comprising a nucleic acid sequence consisting essentially of nucleotides 34-324 of Fig. 1B (lower strand) (SEQ ID NO: 42), wherein said nucleic acid sequence encodes a protein competent to induce bone and cartilage formation in a mammal.

86. (New) An isolated nucleic acid molecule comprising a nucleic acid sequence encoding a polypeptide chain comprising the amino acid sequence VPKPCCAPT (SEQ ID NO: 27), wherein said polypeptide chain is competent to induce cartilage and bone formation in a mammal when combined with a second polypeptide chain to form a dimeric species.

87. (New) A host cell transformed with the nucleic acid molecule of any one of claims 81, 82, 84, 85, or 86.

88. (New) A host cell of claim 87 wherein said cell is a prokaryotic or eukaryotic cell.

89. (New) The host cell of claim 88, wherein said prokaryotic cell is an E.coli cell, and said eukaryotic cell is a Saccharomyces cell or a mammalian cell.

90. (New) The isolated nucleic acid molecule of any one of claims 81-86 wherein the nucleic acid is DNA.

91. (New) The host cell of any one of claims 87-89 wherein the nucleic acid is DNA.

In the Specification:

Please replace the first full paragraph on page 1, following "Cross Reference to Related Application," with the following replacement paragraph. A clean version and a marked up version of the replacement paragraph are attached at the end of this Preliminary Amendment.